



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
2003/00493

July 11, 2003

Mr. Lawrence C. Evans  
U.S. Army Corps of Engineers  
Attn: Judy Linton  
Regulatory Branch, CENWP-OP-G  
P.O. Box 2946  
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Repair of a Breach in the Proposed Loop Trail Route in the Leadbetter Peninsula Area, Between Bybee Lake and the Columbia Slough (Rivergate Industrial Park), Multnomah County, Oregon (Corps No. 200200133)

Dear Mr. Evans:


Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) that addresses the proposed breach repair in the Leadbetter Peninsula area between Bybee Lake and the Columbia Slough (Rivergate Industrial Park) in Multnomah County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize the continued existence of ESA-listed Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR fall-run chinook salmon (*O. tshawytscha*), SR spring/summer-run chinook salmon, Upper Columbia River (UCR) spring-run chinook salmon, Lower Columbia River (LCR) chinook salmon, Upper Willamette River (UWR) chinook salmon, Columbia River chum salmon (*O. keta*), SR steelhead (*O. mykiss*), UCR steelhead, Middle Columbia River steelhead, UWR steelhead, and LCR steelhead. This Opinion includes reasonable and prudent measures with terms and conditions that are necessary to minimize the potential for incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600. This reach of the Columbia River has been designated as EFH for chinook salmon, coho salmon (*O. kistutch*), and starry flounder (*Platyichthys stellatus*).



If you have any questions regarding this consultation, please contact Ron Lindland of my staff in the Oregon Habitat Branch at 503.231.2315.

Sincerely,

  
for D. Robert Lohn  
Regional Administrator

cc: Gerry Meyer, Port of Portland  
Denise Rennis, Port of Portland

# Endangered Species Act - Section 7 Consultation Biological Opinion

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## Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

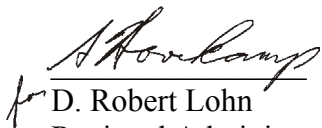
Repair of a Breach in the Proposed Loop Trail Route in the Leadbetter Peninsula Area,  
Between Bybee Lake and the Columbia Slough (Rivergate Industrial Park),  
Multnomah County, Oregon  
(Corps No. 200200133)

Agency: Army Corps of Engineers

Consultation  
Conducted By: NOAA's National Marine Fisheries Service,  
Northwest Region

Date Issued: July 11, 2003

Issued by:

  
for D. Robert Lohn  
Regional Administrator

Refer to: 2003/00493

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# **1. INTRODUCTION**

## **1.1 Consultation History**

On April 30, 2003, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a letter dated April 28, 2003 from the Corps of Engineers (COE) requesting formal consultation on the issuance of a permit to the Port of Portland for repair of a breach in the proposed loop trail route in the Leadbetter Peninsula area between Bybee Lake and the Columbia Slough (Rivergate Industrial Park). In the April 28, 2003, letter the COE determined that Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR spring/summer-run chinook salmon (*O. tshawytscha*), SR fall-run chinook salmon (*O. tshawytscha*), Lower Columbia River (LCR) steelhead (*O. mykiss*), Upper Columbia River (UCR) steelhead, SR steelhead, Middle Columbia River (MCR) steelhead, Columbia River (CR) chum salmon (*O. keta*), LCR chinook salmon, UCR spring-run chinook salmon, Upper Willamette River (UWR) steelhead, and UWR chinook salmon may occur within the project area and that the proposed project is "likely to adversely affect" (LAA) the subject listed species and/or their habitat. References and dates listing status, critical habitat designations and ESA section 4(d) take prohibitions are listed in Table 1.

The entire project includes a number of activities at seven separate sites within the Rivergate Industrial Area which were required by a Consent Decree issued by the U.S. District Court on January 31, 2001, in Jones v. Thorne. Phase 1 of the project was addressed in a biological opinion issued by NOAA Fisheries on December 17, 2001 (refer to: NOAA Fisheries 2001/00947). Phase 2 (loop trail construction) of the project was addressed in a biological opinion issued by NOAA Fisheries on August 23, 2002 (refer to: NOAA Fisheries 2002/00772). The project addressed in this Opinion occurred in the Leadbetter Peninsula area between Bybee Lake and the Columbia Slough where excavation and fill activities occurred during both phases of the project. According to the April 28, 2003, letter from the COE, the breach occurred in February of 2003 when substantial rains caused Bybee Lake to overtop the Leadbetter Peninsula excavation area. The rising water breached the sandbank between the new excavation and the Columbia Slough. Presently, the breach is estimated to be 80 feet wide at the widest point with a maximum depth of 28 feet from the original surface elevation.

NOAA Fisheries prepared this Opinion to address impacts to these species as a result of the proposed project. The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of the above listed species, and to explain why NOAA Fisheries believes the proposed action will adversely effect essential fish habitat (EFH).

## **1.2 Proposed Action**

The proposed action is repair of a breach in the proposed loop trail route in the Leadbetter Peninsula area between Bybee Lake and the Columbia Slough (Rivergate Industrial Park). Construction areas will be flagged before commencement of work to minimize disturbance of riparian vegetation. Before placement of material to fill the breach, floating turbidity curtains and sediment fencing would be placed to minimize turbidity increases in the Columbia Slough

resulting from construction activities. Construction is proposed to begin approximately August 1, 2003, and would be completed before September 15, 2003, which is within the Oregon Department of Fish and Wildlife's (ODFW) preferred in-water work period for this area. A list of standard construction best management practices regarding project coordination, staging, equipment requirements, dewatering, construction corridor management, timing of work, and erosion and pollution control was attached to the April 28, 2003, letter from the COE, and is incorporated herein by reference.

Approximately 6,900 cubic yards of previously dredged sand will be transported by dump truck from an existing upland storage pile. Initially, the sand fill material would be placed in the breach area using a crane equipped with a clamshell bucket or other method to minimize flow of turbid water back into the Columbia Slough. The crane operator would place sand in the breach area by lowering full buckets of sand into the water and opening the bucket near the bottom of the breach to release the sand. As filling progresses, sand would displace water within the breach prism and displaced water would flow back to the Columbia Slough. Once the fill level is above the water level, the contractor may elect to place sand directly by end-dump truck in layers up to one foot thick, or keep placing sand with the crane. A bulldozer and vibratory compactor will spread and compact each sand layer above the water level. Based on historical data, the water level in the Columbia Slough is expected to be at a seasonal low during the work period. Depending on the water level in the Columbia Slough at the time the work is performed, the breach may be isolated with sandbags and the water pumped out before adding fill material to plug the breach.

Native soil, again from an existing stockpile from previous excavations in the area, would be placed to a minimum depth of three feet at the toe of the slope. All affected slopes would be graded to a maximum slope of 3H:1V and overlain with geotextile for stabilization. The geotextile would in turn be covered a one-foot thick layer of quarry spoils to resist erosion during high water. The slopes and crest would then be covered with a one-foot thick layer of native soil from the exiting stockpile, overlain with coir fiber, and seeded and planted with native riparian vegetation.

The total disturbed area below the top of the bank on the Columbia Slough side of the breach is approximately 1,900 square feet. This area between the top of the bank and 10.0 NGVD would be planted with 100 livestakes each of black cottonwood (*Populus balsamifera* var. *trichocarpa*) and red-osier dogwood (*Cornus sericea*) in a triangular spacing, four-foot on center. Between elevations 10.0 NGVD and 5.5 NGVD, fifty livestakes each of red-osier dogwood and Columbia River willow (*Salix fluviatilis*) would be planted in a triangular pattern, four-foot on center.

Following repair of the breach, the proposed trail will be constructed across the site in accordance with the existing COE permit (Corps No. 200200133) and in accordance with the terms and conditions in NOAA Fisheries' August 23, 2002, biological opinion (refer to: 2002/00772).

## **2. ENDANGERED SPECIES ACT**

### **2.1 Biological Opinion**

#### **2.1.1 Biological Information**

The Columbia River and Columbia Slough serve as migration areas for all listed species under consideration in this Opinion. The action area may also serve as a feeding and rearing area for juvenile chum and sub-yearling chinook salmon. Essential features of the area for the species are: (1) Substrate; (2) water quality; (3) water quantity; (4) water temperature; (5) water velocity; (6) cover/shelter; (7) food (juvenile only); (8) riparian vegetation; (9) space; and (10) safe passage conditions (50 CFR 226). The proposed action may affect the essential habitat features of water quality and riparian vegetation.

References for further background on listing status, biological information and critical habitat elements can be found in Table 1.

#### **2.1.2 Evaluating Proposed Actions**

The standards for determining jeopardy and destruction or adverse modification of critical habitat are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations combined with the Habitat Approach (NMFS 1999): (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species and whether the action is consistent with the available recovery strategy; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors is likely to appreciably reduce the likelihood of species survival in the wild or destroy or adversely modify critical habitat. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with cumulative effects when added to the environmental baseline, is likely to jeopardize the ESA-listed species. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

**Table 1.** References for Additional Background on Listing Status and Biological Information for the Listed Species Addressed in this Opinion

<b>Species</b>	<b>Listing Status</b>	<b>Protective Regulations</b>	<b>Biological Information, Historical Population Trends</b>
Columbia River chum salmon	March 25, 1999; 64 FR 14508, Threatened	July 10, 2000; 65 FR 42422	Johnson <i>et al.</i> 1997; Salo 1991
Lower Columbia River steelhead	March 19, 1998; 63 FR 13347, Threatened	July 10, 2000; 65 FR 42422	Busby <i>et al.</i> 1995; 1996
Middle Columbia River steelhead	March 25, 1999; 64 FR 14517, Threatened	July 10, 2000; 65 FR 42422	Busby <i>et al.</i> 1995; 1996
Upper Columbia River steelhead	August 18, 1997; 62 FR 43937, Endangered	July 10, 2000; 65 FR 42422	Busby <i>et al.</i> 1995; 1996
Upper Willamette River steelhead	March 25, 1999 64 FR 14517, Threatened	July 10, 2000; 65 FR 42422	Busby <i>et al.</i> 1995; 1996
Snake River Basin steelhead	August 18, 1997; 62 FR 43937, Threatened	July 10, 2000; 65 FR 42422	Busby <i>et al.</i> 1995; 1996
Snake River sockeye salmon	November 20, 1991; 56 FR 58619, Endangered	Nov. 20, 1991; 56 FR 58619	Waples <i>et al.</i> 1991a; Burgner 1991
Lower Columbia River chinook salmon	March 24, 1999; 64 FR 14308, Threatened	July 10, 2000; 65 FR 42422	Myers <i>et al.</i> 1998; Healey 1991
Upper Columbia River spring-run chinook salmon	March 24, 1999; 64 FR 14308, Endangered	July 10, 2000; 65 FR 42422	Myers <i>et al.</i> 1998; Healey 1991
Upper Willamette River chinook salmon	March 24, 1999; 64 FR 14308, Threatened	July 10, 2000; 65 FR 42422	Busby <i>et al.</i> 1995; 1996
Snake River spring/summer-run chinook salmon	April 22, 1992; 57 FR 14653, Threatened	April 22, 1992; 57 FR 14653	Matthews and Waples 1991; Healey 1991
Snake River fall-run chinook salmon	April 22, 1992; 57 FR 14653, Threatened	April 22, 1992; 57 FR 14653	Waples <i>et al.</i> 1991b; Healey 1991



### **2.1.3 Biological Requirements**

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to a naturally-reproducing population level, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration and rearing. Listed Pacific salmonid survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while removing adverse impacts of current practices. In conducting analyses of habitat-altering actions, NOAA Fisheries defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a "habitat approach" to its analysis (NMFS 1999). The current status of the listed species covered by this Opinion, based upon their risk of extinction, has not significantly improved since they were considered for listing.

### **2.1.4 Environmental Baseline**

In step 2 of NOAA Fisheries' analysis, we evaluate the relevance of the environmental baseline in the action area to the species' current status. The environmental baseline is an analysis of the effects of past and ongoing human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined by NOAA Fisheries regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." The action area for this project, therefore, includes the north bank and adjacent streambed of the Columbia Slough, from the upstream edge of the breach downstream to the extent of visible turbidity resulting from construction activities.

The Port of Portland plans to conduct a series of mitigation projects at the Rivergate Industrial Area site along the lower Columbia Slough. The Columbia Slough discharges to the Willamette River near Kelley Point Park and the confluence of the Columbia and Willamette Rivers. The lower slough is accessible to salmonids via the Willamette River and splits at river mile (RM) 1.5 into the north slough and the mainstem. The mainstem of the slough is accessible until RM

8.2, where a levee and pump station prevent further access (Ellis 2001). The Columbia Slough is tidal riverine habitat used by salmonids for migration and rearing.

Originally, the slough was a series of wetlands and marshes; it is now a highly-managed water system with dikes and pumps to provide watershed drainage and flood control for the lowlands surrounding it (ODEQ 1998). The slough is listed on the Oregon Department of Environmental Quality (DEQ) 303(d) list as water quality limited for: Bacteria, phosphorus, pH, dissolved oxygen, chlorophyll and temperature (ODEQ 1998). According to Ellis (2001), the Columbia Slough has few properly functioning environmental indicators, including: Water quality, access, habitat elements, channel conditions, hydrology, and watershed conditions.

Channelization of the Columbia Slough has reduced the complexity of the habitat features and the connectivity with adjacent wetlands and sloughs. Refugia for migrating salmonids is present but not abundant (Ellis 2001). There is some large woody debris (LWD) present in the slough, but no comprehensive study had been done when the BA was written. Lack of LWD and refugia reduces the cover available to juvenile salmonids.

The riparian vegetation in the slough at the project site has been modified over the years by levee and dike construction and commercial and industrial development. According to Ellis (2001), the riparian area consists mostly of mature cottonwoods and no conifers. The cottonwoods along the bank provide some stabilization, but up to 10% of the bank is eroding. Within the lower slough, most of the riparian areas are connected and dominated by cottonwood with Red-osier dogwood, Himalayan blackberry and Pacific willow (Ellis 2001). The disturbance in the watershed continues with road expansion and water management in this system (Ellis 2001).

The environmental baseline within the action area for the proposed project has been further degraded by human activity. This area contains large industrial shipping facilities including berths and dense roadways. There is some riparian vegetation present in the project area, but habitat function and erosion control would be increased with more planting in the riparian area. The industrialization of this area contributes to the degraded condition of the Willamette River, including: Reduced water quality, increased water temperature, altered timing and quantity of runoff, and decreased riparian cover and habitat refugia.

### **2.1.5 Effects of Proposed Action**

In step 3 of the jeopardy analysis, NOAA Fisheries evaluates the effects of the proposed action on listed fish and their habitat.

Repairing the breach in the proposed trail route in the Leadbetter Peninsula area along the north bank of the Columbia Slough involves filling the breach with previously dredged sand. Since water will be present in the breach area when the initial layers of sand are added to plug the breach, some sediment will be transported to the Columbia Slough in the area of the breach and for a short distance downstream. Therefore, some increase in turbidity is expected in the action area along the north bank of the Columbia Slough. Behavioral avoidance of turbid waters may

be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, except when the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). In addition, a potentially positive reported effect is providing refuge and cover from predation (Gregory and Levings 1998).

Fish that remain in turbid, or elevated total suspended solids, waters experience a reduction in predation from piscivorous fish and birds (Gregory and Levings 1998). In systems with intense predation pressure, this provides a beneficial trade-off (*e.g.*, enhanced survival) to the cost of potential physical effects (*e.g.*, reduced growth). Turbidity levels of about 23 Nephelometric Turbidity Units (NTU) have been found to minimize bird and fish predation risks (Gregory 1993). Exposure duration is a critical determinant of the occurrence and magnitude of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and larger juvenile salmonids appear to be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjorn and Reiser 1991). However, research indicates that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991). Adding fill material to repair the breach may have short term adverse effects on salmonids. However, implementation of sediment control measures described in section 1.2 above are expected to minimize transport of sediment to the Columbia Slough and minimize the area of potential increased turbidity.

All areas along the north bank of the Columbia Slough that are disturbed by construction activities associated with the proposed breach repair (an estimated 1900 square feet) will be planted with native varieties of trees, shrubs and seed mix. Over time, the plantings will improve habitat conditions including microclimate (light, temperature, humidity), contribution of organic matter and woody debris to the channel and resistance to erosion through root strength (Gregory *et al.* 1991). Degree of shading of streams is a function of the structure and composition of riparian vegetation (Gregory *et al.* 1991). As the vegetation matures over time, it will contribute to the improvement of habitat functions. There are no adverse effects to salmonids from the planting of riparian vegetation. No existing trees will be removed in the action area.

#### **2.1.6 Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as those effects of “future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation.” This is step 4 in NOAA Fisheries’ analysis process. Future federal actions, including the ongoing operation of hydropower systems,

hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. However, development of structures and vegetation clearing along the streams is likely to continue. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

### **2.1.7 Conclusion**

The final step in NOAA Fisheries' approach to determine jeopardy is to determine whether the proposed action is likely to appreciably reduce the likelihood of species survival or recovery in the wild. NOAA Fisheries has determined that when the effects of the proposed action addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, it is not likely to jeopardize the continued existence of listed salmonids. NOAA Fisheries used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries believes that the proposed action would cause a minor, short-term degradation of anadromous salmonid habitat due to turbidity increase in Columbia Slough caused by placement of fill material to repair the breach area. Direct mortality of listed salmonid species is not expected. As the newly planted riparian vegetation matures over time, it will contribute to the improvement of habitat functions including microclimate, erosion control and shelter for salmonids.

These conclusions are based on the following considerations: (1) Repair of the breach will be completed between August 1 and September 15, which is within the preferred in-water work window of June 15 to September 15 for the Columbia Slough; (2) sediment control measures are expected to minimize sediment transport and thus minimize turbidity increases in the action area; (3) any turbidity increases which do occur are expected to be of short duration; (4) no existing trees will be removed; (5) because the area of the breach has been recently disturbed by construction activities, little if any established riparian vegetation will be affected; and (6) the proposed action is not likely to impair properly functioning habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

### **2.1.8 Reinitiation of Consultation**

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this biological opinion; (2) new information or project monitoring reveals effects of the action

that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

## **2.2 Incidental Take Statement**

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

### **2.2.1 Amount or Extent of the Take**

NOAA Fisheries anticipates that the proposed action is reasonably certain to result in incidental take of listed species covered in this Opinion because of detrimental effects from increased turbidity in the action area along the Columbia Slough and limited riparian habitat disturbance (harm).

Effects of actions such as the one covered by this Opinion are unquantifiable in the short term, and are not expected to be measurable as long term effects on habitat or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as “unquantifiable”. Based on the information provided by the COE and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion. The extent of the take is limited to the project area.

### **2.2.2 Reasonable and Prudent Measures**

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of listed salmonid species resulting from the action covered by this Opinion. The COE shall include, as part of the section 10 River and Harbors Act permit, measures that will:

1. Minimize the likelihood of incidental take from construction, culvert removal, and fill excavation activities by applying permit conditions to avoid or minimize disturbance to riparian and aquatic systems.
2. Minimize the likelihood of incidental take by ensuring the success of revegetation.
3. Minimize the likelihood of incidental take by completing a comprehensive monitoring and reporting program to ensure this Opinion is meeting its objective of minimizing the likelihood of take from permitted activities.

### **2.2.4 Terms and Conditions**

To be exempt from the prohibitions of section 9 of the ESA, the COE must require, as part of the section 10 Permit, that the applicant and/or their contractors comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (construction, culvert removal, and fill excavation activities), the COE shall ensure that:
  - a. Project design. Each project will be individually reviewed to ensure that impacts to natural resources have been avoided, minimized and mitigated, and that the following overall project design conditions are met.
    - i. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project.
    - ii. In-water work. All work which could potentially contribute sediment or toxicants to listed fish-bearing systems, will be completed within the ODFW approved in-water work period;
      - (1) Work period extensions. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved in writing by biologists from NOAA Fisheries.
    - iii. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for each authorized project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations:

- (1) Methods that will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
  - (2) Methods that will be used to confine, remove, and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
  - (3) A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
  - (4) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
- b. Pre-construction activities. Before significant alteration of the action area, the following actions will be accomplished.
- i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
  - ii. The following erosion control materials are onsite.
    - (1) A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
    - (2) An oil-absorbing, floating boom is available on-site during all phases of construction whenever surface water is present.
  - iii. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
- c. Heavy Equipment. Heavy equipment use will be restricted as follows.
- i. When heavy equipment is required, the applicant will use equipment having the least impact (*e.g.*, minimally-sized, rubber-tired).
  - ii. Heavy equipment will be fueled, maintained and stored as follows.
    - (1) Place vehicle staging, maintenance, refueling, and fuel storage areas a minimum of 150 feet horizontal distance from any stream.
    - (2) All vehicles operated within 150 feet of any stream or waterbody will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
    - (3) When not in use, vehicles will be stored in the vehicle staging area.

- d. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
- i. Material removed during excavation will only be placed in locations where it cannot enter streams or other waterbodies.
  - ii. All exposed or disturbed areas will be stabilized to prevent erosion.
    - (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,<sup>1</sup> mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within 7 days of exposure. Non-native sterile seed mix may be used the first year for temporary erosion control.
    - (2) All other areas will be stabilized quickly as reasonable, but within 14 days of exposure.
    - (3) Seeding outside of the growing season will not be considered adequate nor permanent stabilization.
  - iii. All erosion control devices will be inspected during construction to ensure that they are working adequately.
    - (1) Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites.
    - (2) If inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.
    - (3) Erosion control measures will be judged ineffective when turbidity plumes are evident in waters occupied by listed salmonids during any part of the year.
  - iv. If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
  - v. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 5 inches (12 cm). Catch basins will be maintained so that no more than 6 inches (15 cm) of sediment depth accumulates within traps or sumps.
  - vi. Sediment-laden water created by construction activity will be filtered before it leaves the right-of-way or enters a stream or other waterbody. Silt fences or other detention methods will be installed as close as reasonable to culvert outlets to reduce the amount of sediment entering aquatic systems.

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<sup>1</sup> By Executive Order 13112 (February 3, 1999), federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.



2. To implement reasonable and prudent measure #2 (ensuring the success of revegetation), the COE shall ensure that revegetation at the project sites is completed in the following manner:
  - a. All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with mulch, native herbaceous seeding, and native woody vegetation.
  - b. Disturbed areas will be planted with native vegetation specific to the project vicinity or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
  - c. Plantings will be arranged randomly within the revegetation area.
    - i. If revegetation success has not been achieved after three years, the applicant will submit an alternative plan to the COE. The alternative plan will address temporal loss of function.
    - ii. Plant establishment monitoring will continue and plans will be submitted by the applicant to the COE until site restoration success has been achieved.
  - d. No herbicide application will occur within 300 feet of any stream channel as part of this permitted action, unless approved in advance by a NOAA Fisheries biologist. Mechanical removal of undesired vegetation and root nodes is permitted.
  - e. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
3. To implement reasonable and prudent measure #3 (monitoring and reporting), the COE shall ensure that:
  - a. Monitoring. Within 30 days of completing the project, the COE will submit a monitoring report to NOAA Fisheries describing the COE's success meeting these terms and conditions. This report will consist of the following information.
    - i. Project identification.
      - (1) Project name.
      - (2) Starting and ending dates of work completed for this project.
      - (3) Name and address of the construction supervisor.
    - ii. A narrative assessment of the project's effects on natural stream function.
    - iii. Photographic documentation of environmental conditions at the project site before, during and after project completion.
      - (1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
      - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
    - iv. Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually

discernable environmental conditions at the project area, and upstream and downstream of the project.

- b. If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; telephone: 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.
- c. Monitoring reports will be submitted to:

National Marine Fisheries Service  
Oregon Habitat Branch  
**Attn: 2003/00493**  
525 NE Oregon Street  
Portland, OR 97232

### **3. MAGNUSON-STEVENSON ACT**

#### **3.1 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in federal fishery management plans. In addition, the MSA requires federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

### **3.2 Identification of EFH**

The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km)(PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other waterbodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border.

Detailed descriptions and identifications of EFH for the groundfish species are found in the Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to *The Pacific Coast Groundfish Management Plan* (PFMC 1998a) and NOAA Fisheries' *Essential Fish Habitat for West Coast Groundfish Appendix* (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the *Coastal Pelagic Species Fishery Management Plan* (PFMC 1998b). Detailed descriptions and identifications of EFH for

salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

### **3.3 Proposed Action**

The proposed action is detailed above in section 1.2. This area has been designated as EFH for various life stages of chinook and coho salmon and starry flounder (*Platyichthys stellatus*).

### **3.4 Effects of Proposed Action**

As described in detail in section 1.5, the proposed activities may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. Excavation of river bank material could result in a temporary increase in turbidity.

### **3.5 Conclusion**

NOAA Fisheries believes that the proposed action will adversely affect the EFH for Pacific salmon species and starry flounder.

### **3.7 EFH Conservation Recommendations**

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the COE and all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.3 and 2.2.4, respectively, are applicable to EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

### **3.8 Statutory Response Requirement**

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) require the federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

### **3.9 Supplemental Consultation**

The COE must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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